

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed May 5, 2005 ("Office Action"). At the time of the Office Action, Claims 1-28 were pending in the Application. In the Office Action, the Examiner rejects Claims 1-28. Applicant amends Claims 1, 5, 8, 13, 14, 18, and 22. As described below, Applicant believes all claims to be allowable over the cited references. Therefore, Applicant respectfully requests reconsideration and full allowance of all pending claims.

Section 103 Rejections

The Examiner rejects Claims 1-12, 14-17, and 22-28 under 35 U.S.C. § 103(a) as being unpatentable over C.M.R. Leung "GDSA: An X.500 Directory Implementation Supporting Heterogeneous Databases," 1991 ("*Leung*"). Applicant respectfully traverses these rejections for the reasons stated below.

Independent Claim 1 of the present application, as amended, recites:

A method of arranging data in a database comprising:
creating a first table adapted for storing data comprising at least one data entry, the data entry comprising a plurality of data components, the first table comprising one row for each data entry;
and
creating a second table adapted for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components.

Applicant respectfully submits that *Leung* does not disclose, teach, or suggest each and every element of Applicant's Claim 1.

For example, Applicant respectfully submits that *Leung* does not disclose, teach, or suggest "creating a second table adapted for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components," as recited in Applicant's Claim 1. To the contrary, *Leung* merely

discloses an X.500 directory implementation supporting heterogeneous databases that “consists of two objects, the DIT and ENTRY, stored as two relational tables.” (Title; Page 88, lines 14-16).

With regard to the DIT table, *Leung* states that the DIT table “holds the information of the structure of the DIT.” (Page 88, line 15). For example, each record of the DIT table depicted in Figure 4b includes the system identifier of an object (i.e., “Entry-ID”), that of its parent (i.e., “Parent-ID”), and its Relative Distinguished Name (RDN). (Page 88, lines 15-16 and Figure 4b). With regard to the ENTRY table, *Leung* states that the ENTRY table “holds detailed information about each directory object.” (Page 88, lines 17-18). For example, the record of the ENTRY table depicted in Figure 4b includes the system identifier of an object (i.e., “Entry-ID”), an attribute type (i.e., “Attr-type”), and an attribute value of the attribute type in both normalized (i.e., “Norm-value”) and raw (i.e., “Raw-value”) forms. (Page 88, lines 18-19 and Figure 4b). Accordingly, for each record in the DIT table, *Leung* indicates that there will be a corresponding record in the ENTRY table that may be identified by the common Entry-ID. (Figure 4b). As such, the directory implementation of *Leung* does not include “creating a second table adapted for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components,” as recited in Applicant’s Claim 1.

Furthermore, the M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations.” M.P.E.P. § 2142, 2143. The teaching, suggestion or motivation for the modification or combination and the reasonable

expectation of success must both be found in the prior art and cannot be based on an Applicant's disclosure. *See Id.* (citations omitted). "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.¹ According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

¹ Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant's disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, "The tendency to resort to 'hindsight' based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. "A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.'" *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a motivation to combine the references that create the case of obviousness. *See id.* *See also, e.g., Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

In the Office Action, the Examiner acknowledges that *Leung* does not disclose creating a second table. (Office Action, page 3). In maintaining the rejection, the Examiner speculates that “[i]t would have been obvious to one [of] ordinary skill in the art at the time the invention was made to modify *Leung* with steps of creating a second table adapted for storing data components and having one row for each component of the data . . . to provide a complete set of operations that can only be used to manipulate objects stored in the structural part.” (Office Action, page 3). The Examiner’s summary conclusion, however, amounts to mere speculation and does not provide the suggestion or motivation necessary to make the proposed combination.² The mere possibility that a modification might improve *Leung*, as the Examiner asserts, does not even remotely provide the required teaching, suggestion, or motivation to modify the teachings of *Leung*. Applicant respectfully submits that in making this unobvious leap the Examiner has used the type of hindsight reconstruction explicitly forbidden by the M.P.E.P. and Federal Circuit. Accordingly, Applicant respectfully submits that the rejection of Claim 1 is improper.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 1, together with Claims 2-7 that depend from Claim 1.

With regard to independent Claim 8, Applicant respectfully submits that *Leung* does not disclose, teach, or suggest “a subsearch table comprising one row for each data component of the at least one row of the search table.” As discussed above with regard to Claim 1, the X.500 directory implementation of *Leung* merely discloses two relational tables, the DIT and ENTRY tables. (Page 88, lines 14-16). The DIT table “holds the information of the structure of the DIT” and includes a record for each object. (Page 88, lines 15-16 and Figure 4b). The ENTRY table “holds detailed information about each directory object” and, thus, also includes a record for each object. (Page 88, lines 17-19

² If the Examiner is relying on “common knowledge” or “well known” art in support of his rationale for modifying *Leung*, the Examiner is requested to produce a reference in support of his position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to modify *Leung*, Applicant respectfully requests that the Examiner produce an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

and Figure 4b). Accordingly, *Leung* indicates that for each record in the DIT table there will be a corresponding record in the ENTRY table. As such, the directory implementation of *Leung* does not include “a subsearch table comprising one row for each data component of the at least one row of the search table,” as recited in Applicant’s Claim 8.

Independent Claim 14 recites certain limitations that are similar to the features discussed above with regard to Claims 1 and 8. As an example, Claim 14 recites “a second table arranged for storing the plurality of data components of the data entry of the first table, the second table comprising one row for each of the plurality of data components.” Thus, for reasons similar to those discussed above with regard to Claims 1 and 8, Applicant respectfully submits that that Claim 14 is allowable over *Leung*.

With regard to independent Claim 22, Applicant respectfully submits that *Leung* does not disclose, teach, or suggest “identifying a component identifier indicating a data type that is associated with the component of the first table” and “using the component identifier indicating the data type to execute one of an exact or initial matching on a column of a second table in order to locate the component in the second table.” As discussed above with regard to Claim 1, *Leung* discloses that each record of the DIT and ENTRY tables depicted in Figure 4b includes the system identifier of an object (i.e., “Entry-ID”). (Page 88, lines 15-18 and Figure 4b). As a result, corresponding records in the DIT and ENTRY tables may be identified by a common Entry-ID. Applicant respectfully submits, however, that the Entry-ID of *Leung* is not the equivalent of Applicant’s claimed “component identifier.” *Leung* only discloses that the Entry-ID is a system identifier of an object. There is no indication in *Leung* that the Entry-ID “[indicates] a data type that is associated with the component of the first table” and that it may be used to “execute one of an exact or initial matching on a column of a second table in order to locate the component in the second table,” as recited in Applicant’s Claim 22.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of independent Claims 8, 14, and 22, together with Claims 9-12, 15-17, and 23-28, which depend from Claims 8, 14, and 22, respectively.

The Examiner rejects Claims 13 and 18-21 under 35 U.S.C. § 103(a) as being unpatentable over *Leung* in view of Paul Barker “An Analysis of User Input to an X.500 White Page Directory Service,” 1995 (“*Barker*”). Applicant respectfully traverses these rejections for the reasons stated below.

Independent Claim 13 of the present application, as amended, recites:

A database having a data storage arrangement comprising:
a first table directed to a hierarchy which defines a relationship between a plurality of objects and configured to have one row per object;
a second table directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects and configured to have one row per value;
and
a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values.

Applicant respectfully submits that the *Leung-Barker* combination does not disclose, teach, or suggest each and every element of Applicant’s Claim 13.

For example, Applicant respectfully submits that the *Leung-Barker* combination does not disclose, teach, or suggest “a second table directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects and configured to have one row per value,” as recited in Applicant’s Claim 13. In the Office Action, the Examiner relies on *Leung* for disclosure of the above-recited features. Applicant has shown above with regard to Claims 1 and 8, however, that the X.500 directory implementation of *Leung* merely discloses two relational tables, the DIT

and ENTRY tables. (Page 88, lines 14-16). The DIT table “holds the information of the structure of the DIT” and includes a record for each object. (Page 88, lines 15-16 and Figure 4b). The ENTRY table “holds detailed information about each directory object” and, thus, also includes a record for each object. (Page 88, lines 17-19 and Figure 4b). Accordingly, *Leung* indicates that for each record in the DIT table there will be a corresponding record in the ENTRY table. As such, Applicant respectfully submits that the directory implementation of *Leung* does not include “a second table directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects and configured to have one row per value,” as recited in Applicant’s Claim 13.

As another example, Applicant respectfully submits that the *Leung-Barker* combination does not disclose, teach, or suggest “a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values.” In the Office Action, the Examiner relies on *Barker* for disclosure of the above-recited features. As discussed in previous Responses to Office Actions, *Barker* merely relates to an analysis of search terms users tend to use when conducting directory searches and suggests that this analysis may be used for the purposes of optimizing the way in which directories search by taking into account the search patterns of users. To illustrate the point, *Barker* uses a number of tables that depict findings of the article. For example, Table III, which was explicitly relied upon by the Examiner in the rejection of Claim 13, categorizes various user input relating to searches for organization names. According to table, when searching for an organization, 48.95% of data users perform a search using the organization’s full name, 2.55% of data users perform a search using the organization’s abbreviate name, and 7.53% of data users perform a search using the organization’s initials. While possibly interesting to the analysis of X.500 Directory search terms, Table III of *Barker* certainly can not be said to be the equivalent of “a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values,” as recited in Applicant’s Claim 13.

Furthermore, Applicant reiterates the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references that is discussed above with regard to Claim 1. Assuming for the purposes of argument that the proposed *Leung-Barker* combination discloses the limitations of Claim 13 (which Applicant disputes above), the rejection of Claim 13 is improper at least because the Examiner has not shown a suggestion or motivation in the references or in the knowledge generally available to one of ordinary skill in the art to combine the cited references, which is required by the M.P.E.P. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination." M.P.E.P. § 2143.01. Nothing in either *Leung* or *Barker* suggests or motivates the proposed combination, nor has the Examiner provided any evidence that suggests the proposed modification.

In the Office Action, the Examiner speculates "it would have been obvious" to "modify the combined teachings of *Leung* and *Barker* with a third table directed to one or more selected components of values . . . to improve the accuracy of the directory searching methods and systems; and to provide alternative names for directory entries." (Office Action, page 9). The Examiner's summary conclusion, however, amounts to mere speculation and does not provide the suggestion or motivation necessary to make the proposed combination.³ The mere possibility that a modification might improve the *Leung-Barker* combination, as the Examiner asserts, does not even remotely provide the required teaching, suggestion, or motivation to modify the teachings of *Leung* and *Barker*. Applicant respectfully submits that in making this unobvious leap the Examiner has again used the type of hindsight reconstruction explicitly forbidden by the M.P.E.P. and Federal Circuit. The M.P.E.P. confirms that this approach is improper and should not be used here.

³ If the Examiner is relying on "common knowledge" or "well known" art in support of his rationale for combining *Leung* and *Barker*, the Examiner is requested to produce a reference in support of his position pursuant to M.P.E.P. § 2144.03. If the Examiner is relying on personal knowledge to supply the required motivation or suggestion to combine *Leung* and *Barker*, Applicant respectfully requests that the Examiner produce an affidavit supporting such facts pursuant to M.P.E.P. § 2144.03.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 13.

Independent Claim 18 recites certain limitations that are similar to the features discussed above with regard to Claim 13. As an example, Claim 18 recites "a second table directed to the plurality of objects of the first table, the second table defining one or more values within each of the plurality of objects and configured to have one row per value." As another example, Claim 18 recites "a third table directed to one or more selected components of the one or more values of the second table and configured to have one row for each component of each of the one or more values." Thus, for reasons similar to those discussed above with regard to Claim 13, Applicant respectfully submits that Claim 18 is allowable over the proposed *Leung-Barker* combination.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 18, together with Claims 19-21 which depend from Claim 18.

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CONCLUSION

Applicant has made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicant respectfully requests full allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Jenni R. Moen, Attorney for Applicant, at the Examiner's convenience at (214) 953-6809.

Applicant encloses a check for \$120.00 for the one month Notification of Extension of Time. Applicant believes that no other fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,
BAKER BOTTS L.L.P.
Attorneys for Applicant



Jenni R. Moen
Reg. No. 52,038

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Correspondence Address:

at Customer No. **05073**